

**HUMAN SERINE CARBOXYPEPTIDASE**

6 This application is a divisional application of U.S. application Ser. No. 09/299,689, filed April 26, 1999, <sup>now U.S. Patent 6,379,913,</sup> entitled NOVEL HUMAN SERINE CARBOXYPEPTIDASE, which is a divisional application of U.S. application Ser. No. 08/828,488, filed March 31, 1997, and issued on July 20, 1999 as U.S. Patent No. 5,925,521, entitled HUMAN SERINE CARBOXYPEPTIDASE. Both of these applications are hereby expressly incorporated by reference herein.

**FIELD OF THE INVENTION**

This invention relates to nucleic acid and amino acid sequences of a novel human serine carboxypeptidase and to the use of these sequences in the diagnosis, prevention, and treatment of disorders associated with expression of serine carboxypeptidase.

**BACKGROUND OF THE INVENTION**

Serine carboxypeptidases are a family of proteases found in vertebrate and invertebrate tissues that function in many physiological processes. These proteases remove a wide range of COOH-terminal amino acids, and in doing so are able to activate, inactivate, and modulate enzyme and peptide hormone activity. Many active forms of mammalian carboxypeptidases are located in lysosomes where they regulate intracellular protein processing, degradation and turnover. In plants and insects, the serine carboxypeptidases play a role in posttranslational protein modifications including mobilization of storage proteins and hormone activation. The extensively characterized KEX1 yeast carboxypeptidase activates K1 and K2 killer toxins and alpha-factor (mating pheromone) by removing the lysine and arginine residues from the precursor forms. The carboxypeptidases exhibiting this enzymatic activity are distinguished by a common catalytic triad. Ser, His, and Asp residues, and are inhibited by serpins (Galjart, J. (1988) Cell 54:755-764; Latchinian-Sadek, L. et al. (1994) Eur. J. Biochem. 219:647-652; Elsliger, M.A. (1994) Proteins 18:81-93).

Human lysosomal protective protein (HPP) is a serine carboxypeptidase with multiple biological properties. It functions as a protease with properties similar to cathepsin A at the acidic